



MINISTRY OF
AGRICULTURE, FISHERIES AND FOOD



**FOOD STANDARDS COMMITTEE
REPORT ON CREAM**

LONDON
HER MAJESTY'S STATIONERY OFFICE
1967

1s. 9d. NET



FOOD STANDARDS COMMITTEE

The terms of reference of the Food Standards Committee are:

To advise the Secretary of State for Scotland, the Minister of Agriculture, Fisheries and Food, the Minister of Health, and as respects Northern Ireland the Secretary of State for the Home Department, on the composition, description, labelling and advertising of food with particular reference to the exercise of the powers conferred on Ministers by Sections 4, 5 and 7 of the Food and Drugs Act, 1955, and the corresponding provisions in enactments relating to Scotland and Northern Ireland.

The members of the Food Standards Committee at the time of the completion of this report were:

PROFESSOR A. G. WARD, O.B.E., M.A., F.INST.P. (*Chairman*)

J. G. BAUMGARTNER, Esq.

COLIN S. DENCE, Esq., O.B.E.

H. EGAN, Esq., B.Sc., Ph.D., D.I.C., F.R.I.C.

HUGH C. MOIR, Esq., B.Sc., F.R.I.C.

J. A. O'KEEFE, Esq., O.B.E., B.Sc., LL.B., Barrister-at-Law.

REGINALD PASSMORE, Esq., M.D.

Mrs. G. L. S. PIKE, C.B.E., J.P.

R. W. SUTTON, Esq., O.B.E., B.Sc., F.R.I.C.

MISS MARIAN VEITCH.

Expert Assessor: PROFESSOR E. L. CROSSLEY, B.Sc., F.R.I.C., F.L.S.

Joint Secretaries:

L. G. HANSON, Esq.

T. J. COOMES, Esq., B.Sc.



FOOD STANDARDS COMMITTEE

REPORT ON CREAM¹

Introduction and Terms of Reference

1. We were asked to review the Food Standards (Cream) Order 1951, to make recommendations for any necessary amendment and to consider in particular the following questions:

- (a) The establishment of a lower minimum fat content of 18% for sterilised cream either in place of, or in addition to, the present standard of 23%;
- (b) the permitting of a thin or light cream with a minimum content of 12% milk fat; and
- (c) the establishment in England, Wales and Scotland of a standard for whipping cream.

The Present Statutory Position

2. The Food Standards (Cream) Order, 1951 provides for the following standards for cream:

- (a) cream, single cream, pouring cream, coffee cream, fruit cream or any other description of cream—*not less than 18% by weight of milk fat.*
- (b) sterilised cream—*not less than 23% of milk fat.*
- (c) double or thick cream—*not less than 48% of milk fat.*

3. In England and Wales and Scotland there is a standard for clotted cream: "Clotted cream shall consist of that part of cows' milk rich in fat which has been produced and separated by the scalding, cooling and skimming of cows' milk or cream and shall contain not less than 48% by weight of milk fat."

4. In Northern Ireland there is a standard for cream described as 'whipping' or 'whipped' cream which must have not less than 35% by weight of milk fat. (Food Standards (Cream) Regulations (Northern Ireland) 1962.)

5. When the Food Standards Committee were considering the need for standards in 1950, representations were received that it was difficult in practice to ensure a uniformly satisfactory sterilised product below the level of 23%–24% milk fat. For several years past, however, sterilised cream has both been imported from abroad and made in this country with 18% milk fat. Because of the terms of the 1951 Order, this product has not been sold as cream but under such names as "Top Star", "Best of the Milk", "Tip Top".

The Present Cream Market

6. A Study Group comprising members of the National Dairymen's Association, the Co-operative Union and the Milk Marketing Board, issued a report in March 1964 on the cream market in England and Wales and a similar group in Northern Ireland reported in 1965. These reports contain estimates of cream consumption based on the value of sales of milk for cream manufacture. Cream consumption has been increasing each year and is now about five times as great as in 1955. Just over 90% of the cream market is in England and Wales with about 7% in Scotland and 2% in Northern Ireland. Sales are largest in the summer when supplies of fresh fruit are available and at Christmas.

¹The word cream, when printed cream, means cream as a whole; when printed *cream* it means the product referred to in paragraph 2 (a) only.

7. The National Dairy Council publish regular statistics of expenditure by consumers on cream. These show that at present about 33% of the expenditure in Great Britain is on sterilised cream and 50% on double cream with the remaining 17% divided equally between clotted cream and *cream*. There are however important regional preferences. London and the South account for half the total expenditure on cream in the United Kingdom and these are the only areas with significant sales of *cream* and clotted cream. The main market for sterilised cream is in the Midlands, North and Scotland.

8. The position in Northern Ireland is different. *Cream* is not available. The most widely used cream is whipping cream and sales are twice those of double cream. There is a small market for sterilised cream.

The Production of Cream

9. Cream is a product of somewhat variable composition as it is influenced by such factors as the breed of cow and the season of the year. When made on the farm by separation cream normally has a milk fat content of about 50%; hence the choice of the statutory figure at 48% for double cream which allows the farmer a safe working margin for fat content without the need for laboratory control. Cream produced on the farm is not normally heat treated so that its bacteriological condition rests on the health of the herd and the standard of hygiene. It now represents only a small proportion (about 1% to 2%) of total sales.

10. Most cream is now made in the creamery or dairy by the double process of separation and dilution with skimmed milk, although in Northern Ireland cream is still made mainly by separation at the required fat content without dilution. Fat content can be controlled and adjusted readily by appropriate laboratory control and this enables the various creams referred to in paragraphs 7 and 8 to be produced. All cream other than cream made on the farm is subjected to some form of heat treatment either by processes similar to the pasteurisation or ultra heat treatment (U.H.T.) of milk or by sterilisation in a sealed container.

11. Cream is heat treated to improve its keeping quality and this provides, at the same time, a useful public health safeguard. The processes normally used are at least as effective as those used for the pasteurisation of milk. Three pasteurisation processes are under consideration by the Milk and Milk Products Technical Advisory Committee for recommendation for the hygienic production of cream. These provide for heat treatment at 145°F. – 150°F. (63°C. – 66°C.) for 30 minutes, 165°F. (74°C.) for 15 seconds, or flash heating at 180°F. (82°C.), all to be followed by immediate cooling to not more than 45°F. (7°C.). Appropriate steps must be taken to prevent contamination of the cream after pasteurisation. For cream pasteurised in containers the corresponding processes involve the use of heat treatment conditions which ensure that the cream is retained for the appropriate period at one of the above temperatures.

12. Regulations have recently been made by the Ministry of Agriculture in Northern Ireland (Marketing of Milk Products Regulations (Northern Ireland) (S.R. & O. (N.I.) 1966, No. 204)) which contain the following heat treatment provisions in Schedule 4:

"SCHEDULE 4. Part 2

2. *Cream for sale for human consumption as cream*

Cream for sale for human consumption as cream shall be manufactured by:

- (a) being separated, as part of a continuous process of pasteurisation and separation, from milk which has been heated to and retained at a temperature of not less than 161°Fahrenheit (71·5°Centigrade) for a period of at least 15 seconds or which has been heated to a temperature of not less than 185°Fahrenheit (85°Centigrade); or
- (b) being separated from milk and immediately thereafter as part of a continuous process of separation and pasteurisation heated to and retained at a temperature of not less than 163°Fahrenheit (73°Centigrade) for a period of at least 15 seconds or heated to a temperature of not less than 185°Fahrenheit (85°Centigrade) and by being cooled immediately thereafter to a temperature of not more than 45°Fahrenheit (7°Centigrade).

SCHEDULE 4. Part 3

3. Manufacturing Cream

Manufacturing cream shall be manufactured by:

- (a) being separated from milk which has been heated to not less than 185°Fahrenheit (85°Centigrade) as part of a continuous process of pasteurisation and separation; or
- (b) being separated from milk and immediately thereafter as part of a continuous process of separation and pasteurisation heated to and retained at a temperature of not less than 163°Fahrenheit (73°Centigrade) for a period of at least 15 seconds or heated to a temperature of not less than 185°Fahrenheit (85°Centigrade) and by being cooled immediately thereafter to a temperature of not more than 45°Fahrenheit (7°Centigrade)."

13. These heat treatment provisions form part of a system of registration of premises and of prescribed methods of manufacture and subsequent handling in creameries. There are also prescriptions relating to sampling and tests and it is provided that cream for human consumption shall contain no coliform bacteria in one gramme (if made on registered premises). There is a separate provision for the manufacture of farm-bottled cream by holders of Farm-Bottling Licences. No pasteurisation treatment is required for this cream, but it must be labelled "Farm-Bottled" or "Farm-Cartoned" and comply with a bacteriological standard of not more than 50,000 bacteria in one gramme.

14. Ultra heat treated (U.H.T.) cream has been subjected to a process involving retention at a temperature of not less than 270°F. (132°C.) for not less than one second. This is the prescribed process for U.H.T. milk (S.I. 1965 No. 1555). The cream is then packed aseptically in a sterile container to avoid subsequent contamination. The U.H.T. process has not been provided for specifically in the Northern Ireland regulations.

15. We were told that sterilised cream is heat treated in the container usually at about 245°F. (118°C.) for about 20 minutes. The following methods are under consideration by the Milk and Milk Products Technical Advisory Committee for recommendation for the hygienic production of this type of cream:

"Cream which is heat treated in the container in which it is to be sold should be heated as follows:

if in cans or bottles, it should be heated to not less than 237°F. (114°C.) for 25 minutes or the equivalent, e.g. to not less than 225°F. (107°C.) for 45 minutes or 240°F. (115°C.) for 20 minutes. The cream should be cooled as rapidly as possible after heat treatment."

Current practice would, therefore, appear to be at least as effective as that proposed by the Advisory Committee. Sterilisation in the container makes the cream bacteriologically safe until the container is opened. There are no provisions dealing with cream sterilised in the container in the Northern Ireland regulations.

16. Clotted cream is produced by the method described in paragraph 3.

17. In addition to being heat treated, creams may also be homogenised. Creams with a low fat content are usually homogenised so as to obtain adequate viscosity and to maintain a stable emulsion during storage. Single stage homogenisation at 105° - 110°F. (41°C. - 43°C.) and 2,500 pounds per square inch (p.s.i.) produces a viscous product suitable for general use, while a two stage process (at 2,500 p.s.i. and then at 500 p.s.i. to disperse fat globule clumps) produces a thinner product which is more stable in hot liquids.

The Effects of Heat Treatment on Flavour and Keeping Quality

18. In paragraph 161 of our Report on Food Labelling we made the following statement particularly in respect of the heat treatment of cream:

"It has been suggested to us that special provision should be made to distinguish between different types of cream and it has also been proposed that if cream is subjected to any additional process of heat treatment, this fact should also be stated on the label. While we agree in principle that it would be sound in practice to distinguish between different types of cream in a clearer manner than that at present laid down by the Food Standards (Cream) Order 1951, we do not think pasteurised cream could be defined properly without limits of heat treatment being laid down. It would not be appropriate to do this in labelling regulations. We therefore *recommend* that consideration be given to laying down limits for the heat treatment of cream either in revised compositional regulations or special heat treatment regulations. When this has been done, appropriate labelling provisions can be formulated."

19. There are as yet no wholly reliable tests to determine at the time of sale whether a specific heat treatment had been carried out on cream. It has been considered that, without such tests, heat treatment regulations would not be effective. The Northern Ireland regulations rely for enforcement primarily on the retention of temperature records for two months, and inspection. These regulations are part of a comprehensive system of control, and, in our opinion, they point the way to establishing statutory control of heat treatment. We think that consideration should be given, as soon as possible, to the introduction of similar regulations in Great Britain. Such regulations would make the labelling provisions which we consider necessary and which we propose below more effective, although we do not now think that the introduction of labelling provisions need necessarily await the introduction of heat treatment regulations.

20. The development of a "cooked" flavour in pasteurised cream depends on the time and temperature of heating. Any change in flavour is gradual and there is no clear boundary beyond which a cooked flavour results but if the recommended processes referred to in paragraph 11 are used there is only a minimal change in the cream. We do not consider it necessary or practicable to try to distinguish creams subjected to pasteurisation processes somewhat more intensive than the minima recommended.

21. U.H.T. cream is somewhat different from pasteurised cream in flavour and very markedly different in keeping quality. U.H.T. *cream* has only recently

been put on the market and experience is therefore somewhat limited. It is intermediate in flavour between pasteurised cream and sterilised cream. U.H.T. cream will keep in good storage conditions for a matter of months as against the two years or so for sterilised cream; in both cases the ultimate deterioration is not normally bacteriological.

22. Cream subjected to the relatively severe heat treatment necessary to ensure sterilisation in a container has a characteristic flavour. Sterilised cream with 23% fat content can readily be distinguished from all pasteurised cream by flavour and keeping quality and also by consistence when compared with pasteurised cream of the same fat content. The normal life of sterilised cream in the United Kingdom is over two years and, under normal temperature conditions, any slight textural changes which occur within that period can be rectified by shaking. Sterilised cream with 18% fat content is different in flavour and consistence from both pasteurised cream and sterilised cream of 23% fat content; it has a shorter storage life than sterilised 23% because of the earlier onset of textural changes. We were told that production and commercial experience has shown that 23% and 18% were the most appropriate fat levels for these two products. We were also told that all the characteristics of the cream would be subject to gradual change for fat contents between 18% and 23% but that it would not be possible to produce a product with the consistence and storage life of the product at present sold as sterilised cream if the minimum fat content was brought significantly below 23%.

The Consistence of Cream

23. One of the characteristics of cream is its consistence or thickness; most consumers associate the appearance of thickness in cream with richness or a high fat content. This not necessarily the case, e.g. 23% sterilised cream has the appearance of being thick.

24. The consistence of a cream depends on the chemical and physical properties of the original cream and on the nature of the treatments subsequently applied. Apparent thickness is no guarantee of high fat content; a high fat cream can be quite "thin". In general, thickness increases with fat content if all other conditions are constant; the rise is gradual up to 40% fat and more pronounced above that level at which stage the influence of processing conditions tends to become the major factor.

25. Consistence may be influenced by any or all of the following factors according to circumstances: the temperature at which cream is separated from the milk and at which the cream is pasteurised; homogenisation (which as already mentioned is used to increase viscosity at the lower levels of fat content); the speed of cooling; storage conditions and especially length of storage; packaging (certain types of packages, e.g. waxed paper cartons allow evaporation of moisture which leads to thickening of the cream); and in certain circumstances, transport.

Compositional Standards

26. The present statutory standards are based on fat content and clotted cream is further distinguished by a prescribed method of production. Although fat content is not the only consideration, we think it is the most appropriate way of defining standards for cream so long as suitable provisions for labelling can be laid down as provided for in paragraphs 36 - 39 below.

27. We see no reason to change the standard for clotted cream and we *recommend* accordingly.

28. Double cream (48%) is by far the most popular cream. It is used both as a rich, pouring cream and for whipping cream in England, Wales and Scotland. In Northern Ireland it has been mainly superseded for whipping by a whipping cream of 35% fat content.
29. The primary requirements for a whipping cream are that it shall whip easily at 40°F. to about 100% overrun (the increase in volume created by the inclusion of air by the whipping process) to give the required consistence and that there should be no appreciable leakage of liquid from the cream afterwards. Prior homogenisation of the cream is highly undesirable. Cream of 25% fat content can be whipped, given time, but it is unstable and it leaks badly. Cream of more than 40% whips readily (especially with domestic implements) but the overrun is usually low and the product readily becomes buttery or greasy if overwhipped; this is the case with double cream of 48% unless diluted, for example, with milk or with cream of a lower fat content. The ideal fat content for a whipping cream is in the range 35% to 38% fat.
30. It seems reasonable that provision should be made in Great Britain for a whipping cream and that, in view of the success of the present whipping cream in Northern Ireland, the minimum figure should be 35% fat content. We therefore *recommend* continuation of provision for a double cream with 48% fat content and the introduction of a new category of whipping cream with 35% fat content.
31. We received representations that, as already provided for in Northern Ireland, there should be a provision for whipped cream of 35% fat content. We understand that there are some sales of this type of cream by bakers at present and it seems reasonable that it should be allowed with the same minimum fat content as whipping cream. We *recommend* accordingly.
32. The remaining statutory standards are for *cream* (18%) and sterilised cream (23%). Since these were established in 1951, there have been developments which have made possible U.H.T. cream and a sterilised product with a fat content of 18%.
33. The figure of 18% fat content for *cream* was put in the 1951 Order partly because it was considered that a figure at this level would obviate the need for a cream with a still lower fat content. There does, however, seem to be a demand for a lower fat cream with a fat content at about 12% for use in coffee and on cereals. If this is permitted, we think it desirable to raise the minimum for *cream*. The Milk Marketing Board suggested in 1939 that *cream* should have a minimum fat content of 23% and this would have the effect of making the minimum the same as that for sterilised cream. We do not regard this as a very significant advantage as the two products are markedly different. The market for *cream* at its present fat content is not negligible and an increase to a figure as high as 23% might have an appreciable effect on the price without providing a corresponding benefit to the consumer. We therefore *recommend* that *cream* should have a minimum fat content of 20% and that half-cream should be permitted at 12% minimum.
34. For sterilised cream, we accept the view that 23% is the lowest practicable limit for the product which commands a significant share of the cream market at present. There seems to be a need in this field also for a sterilised 'half-cream' and we *recommend* that this should also have a minimum fat content of 12% and that sterilised cream should remain at 23% minimum. This would bring

the sterilised product which has a fat content of 18% within the ambit of the regulations and allow scope for the production of a sterilised cream with a somewhat lower fat content.

35. Although there are technical reasons for differentiating between the minimum fat contents for *cream* and sterilised cream (23%) there is no reason to distinguish U.H.T. cream from *cream* in this respect. U.H.T. cream is at present being marketed with 18% fat content but we were told that it can be satisfactorily produced with up to 30% fat content at least and this is confirmed by experience in the Republic of Ireland.

Nomenclature

36. We consider that appropriate designations should be laid down for the various types of cream we have discussed and that these names should be as simple as possible and bear a clear relationship one to another. We are not in favour of a series of alternative names as in the present order or of the use of expressions describing consistence since these are bound to be misleading.

37. Although there are difficulties in establishing effective control tests for the pasteurisation, ultra heat treatment and sterilisation of cream, we think it would be reasonable for such creams to be distinguished by some description so that the consumer can readily choose between them.

38. We therefore *recommend* that the following names should be laid down:

	<i>Minimum Fat Content by Weight</i>
Clotted cream	48%
Double cream	48%
Whipping cream	35%
Whipped cream	35%
Sterilised cream	23%
Cream	20%
Sterilised half-cream	12%
Half-cream	12%

39. In addition we *recommend* that the following adjectives should be used as part of the appropriate designation immediately preceding the names set out in paragraph 38 above, where appropriate. (This recommendation does not apply to clotted cream.)

"*Untreated*" for cream that has not been subjected to any form of heat treatment sufficient to pasteurise it;

"*Pasteurised*" for cream that has been subjected to an appropriate form of heat treatment to pasteurise it; (see paragraph 11)

"*Ultra heat treated*" or "*U.H.T.*" for cream treated by the U.H.T. process.

We are not in favour of "farm-bottled" as a synonym for "untreated".

Declaration of Fat Content

40. We have considered whether it would be appropriate to require a declaration of fat content on the label but we think that this is not necessary in view of our recommendations for simple statutory names. Moreover, as any declaration would have to be accurate, this would be an onerous requirement; we see no objection, however, to a declaration of fat content by anyone who chooses to make one.

Additions to Cream

41. We received representations about the addition of sugar to cream, the migration of other substances (including preservatives) from flour confectionery to the cream filling and the use of stabilisers. As a general rule, we do not think that substances should be added to cream, but we consider that certain exceptions may be permitted if conditions are clearly laid down.

42. There is no case, in our view, for allowing the addition of a preservative to cream in order to prolong the shelf life of flour confectionery. We do not see any problem in migration of preservatives, sugar or for that matter of substances of any kind from the remainder of an item of flour confectionery to the cream filling.

43. We were told that it is traditional for some bakers to add sugar to cream used in flour confectionery to improve the flavour. The normal amounts added are 1 to 1½ lb. of sugar per gallon of cream and an outside limit would be 1½ lb. per gallon or up to 15% by weight; the addition of appreciably more sugar is self-limiting as there would be a breakdown in the filling. We see no objection to this practice; the percentage of sugar would of course be deducted before applying the minimum standard of fat content to the cream and the product if sold ready prepared would have to be called "sweetened whipped cream" or "whipped cream and sugar". We therefore *recommend* that sugar should be permitted to be added to such cream up to 1½ lb. per gallon.

44. We have recommended that there should be a standard for whipped cream and we see no reason why it should not be sold by retail with sugar added provided the proportions mentioned in the above paragraph are not exceeded and a clear declaration is printed on the label: "Contains X per cent. sugar"; "X" being replaced by the percentage of sugar calculated on the weight of the whole product. We *recommend* accordingly.

45. It was represented that stabilisers should be allowed in whipped cream used in bakery products and that because flour confectionery may contain emulsifiers and stabilisers permitted by the Emulsifiers and Stabilisers in Food Regulations 1962 this permission should be extended to cream used in the product. The whipping properties in cream are subject to considerable seasonal variations (for largely unknown causes) and there are periods when it is difficult to obtain a whipped cream which is satisfactory for use in flour confectionery without the use of a stabiliser. We were told that lack of stability in the whipped cream in flour confections gave rise to serious difficulties when products were stored even for short periods of time and that the problem was becoming more important because of the present tendency towards large scale production and distribution.

46. Thickening substances have been forbidden in cream since 1925. Regulation 4 of the Emulsifiers and Stabilisers in Food Regulations 1962 states that "no cream or reconstituted cream shall contain any thickening substance" and this is defined as "sucrate of lime, gelatine, starch paste or any other substance which when added to cream or reconstituted cream, is capable of increasing its viscosity, but does not include cane sugar or beet sugar". We think it essential that the ban on thickening substances should be continued. But because of the difficulties referred to in paragraph 45 and because the consumer will be protected from deception by the minimum standard of 35% fat content we think that whipped cream should be allowed to contain certain stabilisers. We *recommend* therefore that sodium alginate and carboxymethyl

cellulose should be allowed in whipped cream up to 0.3% by weight. These would be beneficial in reducing separation. Whipped cream should, when any additions have been made, carry a clear declaration on the label in the list of ingredients when sold direct to the consumer or to the baker.

47. We think it is essential that when whipped cream containing either sugar or stabilisers is sold direct to the consumer, there should be a clear declaration that there has been an addition to the cream. This might lead to difficulties when the cream is not sold pre-packed. A notice or ticket placed in close proximity to the point of sale is a reasonable method in many cases but, when this is not practicable, we consider that the seller should make the presence of any additives known to the purchaser at the time of sale either orally or by some other means. We *recommend* accordingly.

48. We were informed that the only additives used in sterilised cream (18% or 23%) were stabilising salts which were needed at certain times of the year to restore to the optimum the seasonal variation in the salt composition of the cream. The addition of up to 0.2% of these salts, which are constituents of the natural mineral salt fraction of the cream and which are excluded from the definition of emulsifiers and stabilisers in the 1962 regulations may be necessary to ensure a satisfactory reaction to the heat processing of the cream. We *recommend* that the following salts be allowed to be added to sterilised cream and sterilised half-cream in amounts up to a combined total of 0.2% by weight: the sodium or potassium salts of carbonic acid, citric acid and orthophosphoric acid and calcium chloride. The presence of these salts should be declared on the label in the list of ingredients.

Summary of Recommendations

49. (a) Consideration should be given, as soon as possible, to the introduction of heat treatment regulations for cream in Great Britain. (Paragraph 19)

(b) The following names and minimum fat contents should be laid down for cream:

	<i>Minimum Fat Content by Weight</i>
Clotted cream	48%
Double cream	48%
Whipping cream	35%
Whipped cream	35%
Sterilised cream	23%
Cream	20%
Sterilised half-cream	12%
Half-cream	12%

(Paragraphs 27-38)

(c) The following descriptions should, where appropriate, form part of the appropriate designation for creams, other than clotted cream: "untreated", "pasteurised", "Ultra heat treated" or "U.H.T." to denote the degree, or otherwise, of heat treatment. (Paragraph 39)

(d) Sugar should be permitted to be added to cream used in flour confectionery, up to 1½lb. per gallon. (Paragraph 43)

(e) Sugar should be permitted to be added to whipped cream, subject to the same limitation as for cream used in flour confectionery and to a declaration on the label. (Paragraph 44)

- (f) Sodium alginate and carboxymethyl cellulose should be permitted to be added to whipped cream up to 0·3% by weight with a clear declaration in the list of ingredients when sold direct to the consumer or the baker. (Paragraph 46)
- (g) When cream containing sugar or stabilisers is not sold pre-packed, the presence of sugar or stabilisers should be made known to the purchaser by notice or ticket or some other means. (Paragraph 47)
- (h) The sodium or potassium salts of carbonic acid, citric acid and orthophosphoric acid and calcium chloride should be permitted to be added to sterilised cream or sterilised half-cream up to a combined total of 0·2% by weight, subject to declaration in the list of ingredients. (Paragraph 48)

LIST OF ORGANISATIONS AND INDIVIDUALS FROM WHOM EVIDENCE HAS BEEN RECEIVED

A.P.V. Co. Ltd.

*Association of Tinned Cream Manufacturers.

*Belfast Co-Operative Society.

*British Baking Industries Research Association.

*Danish Embassy.

Department of Agriculture, Eire.

Express Dairy Company.

*Mr. W. Jenkins, Chief Public Health Inspector, Belfast.

Milk Marketing Board.

*Milk Marketing Board, Northern Ireland.

National Association of Creamery Proprietors and Wholesale Dairymen.

Nestlé Company Limited.

*Northern Dairies Limited.

*Northern Ireland Milk Alliance.

Parliamentary Committee, Co-Operative Union Limited.

Scottish Milk Marketing Board.

United Dairies Limited.

*Gave Oral Evidence